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BILATERAL IBOTENIC ACID LESIONS OF THE BED NUCLEUS OF THE STRIA TERMINALIS IN INTACT MALE RATS: A PILOT STUDY

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The bed nucleus of the stria terminalis (BnST) is commonly thought of as a "relay station" integrating vomeronasal and olfactory information from the medial nucleus of the amygdala (MeA) to the medial preoptic area (MPOA). Recently, Malsbury and Mc Kay (Brain Research Bulletin, '89) reported a sex difference in the pattern of the substance P-immunoreactive (sP-ir) innervation of the medial division of the BnST (larger in males). Moreover, they suggest that the sexually dimorphic innervation of the medial BnST originates from the MeA. Interestingly, sP has been reported to facilitate male sexual behavior when bilaterally injected into the MPOA. Taken together, this suggests that the sP innervation of the BnST may be important in the regulation of male sexual behavior and that the BnST might be more than a relay station for the MeA. Numerous sP-ir cell bodies are present in the BnST, presently, however, nothing is known concerning whether this sP cell group is necessary for the expression of male sexual behavior. Therefore, the purpose of this study is two fold: First, we will examine the effects of ibotenic acid lesions of the BnST on male sexual behavior in order to determine if the BnST is only a relay station or if it is involved in the regulation of male sexual behavior. Second, following the destruction of cell bodies of the medial BnST, we will have effectively eliminated the influence of the sP sexually dimorphic innervation of the medial BnST this will elucidate whether this sP innervation is involved in the neural regulation of sexual behavior in the male rat. The results of this study will further the understanding of the role of sP in sexual behavior.

Adult Long-Evans male rats will be used. Each male will receive either a bilateral 0.3ul pressure injection of either ibotenic acid (10ug/1ul) or phosphate buffered saline into the medial BnST (AP = -0.82; ML = -1.2; DV = -7.1). All males will be tested prior to surgery and then again five - seven days following surgery. A variety of parameters of male sexual behavior will be measured. We postulate that an inhibition of male sexual behavior will be observed.